

**IN THE SPECIFICATION:**

The specification as amended below with replacement paragraphs shows added text with underlining and deleted text with ~~strikethrough~~.

Please REPLACE the paragraph beginning at page 1, line 9, with the following paragraph:

An optical device using an optical waveguide has increased in necessity with the evolution of optical communication, and it is used as an optical modulator, optical demultiplexers, optical switch, or optical wavelength converter, for example. Known examples of the optical waveguide include an optical waveguide formed by diffusing titanium (Ti)-Ti in a LiNbO<sub>3</sub> crystal substrate, an optical waveguide formed by depositing SiO<sub>2</sub> on an silicon (Si) Si substrate, and a polymer optical waveguide. As a practical external modulator, a Mach-Zehnder type optical modulator (LN modulator) using a dielectric crystal substrate such as a lithium niobate (LiNbO<sub>3</sub>) crystal substrate has been developed. Carrier light having a constant intensity from a light source is supplied to the LN modulator to obtain an optical signal intensity-modulated by a switching operation using the interference of light.